DOCUMENT RESUME

ED 321 300 CS 506 644

AUTHOR Wilkins, Brenda M.; Andersen, Peter A.
TITLE Managerial Gender Communication: A Meta-Analysis.
PUB DATE Feb 89
NOTE 50p.; Paper presented at the Annual Meeting of the Western Speech Communication Association (Spokane, WA, February 17-21, 1989). The seven tables contain small type.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Communication Research; Meta Analysis; *Organizational Communication; *Research Methodology; Research Problems; *Sex Stereotypes
IDENTIFIERS Communication Behavior; Management Styles; *Managerial Communication

ABSTRACT

To examine methodological issues of managerial gender communication, a study conducted a meta-analysis of the primary research of managerial gender communication. The study addressed the following four issues: (1) the inconsistent findings in managerial gender communication research; (2) the potential influence of male and female stereotypes on research methodology and outcomes; (3) the potential influence of expectancy bias and experimenter effect on primary research studies; and (4) the effect of time on managerial gender communication research outcomes. Twenty-five studies were selected for the meta-analysis. The following characteristics were recorded for each study: authors of the study; number of subjects; sex of target, sex of subject; types of variables in each study; statistical tests; statistical findings; correlations; whether methodologies relied on perceptions or a record of actual behavior; whether subjects were inside or outside an organization; and specific calculations for each research question. Results indicated that there is no meaningful difference in the communication behaviors of male and female managers based on current quantitative findings. Furthermore, it appears that the behaviors of, or perceptions towards, female and male managers were never substantially different and have not changed over time as a result of female managers' greater involvement in the organizational environment. (Seven tables of data and 58 references are attached.) (MM)

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Managerial Gender Communication

A Meta-Analysis

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Top Four Paper, Organizational Communication. Presented at the Western Speech Communication Association Annual Convention. February 1988, Spokane, WA.

The authors wish to thank Drs. Janis Andersen and Susan Hellweg for their valuable advice on this project.

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MANAGERIAL GENDER COMMUNICATION: A META-ANALYSIS

The study of gender in organizational communication has become extremely popular in the past 15 years. As women migrated to top level management positions, research studies seeking to identify differences and similarities between male and female managers abounded in the 1970s. Currently, "Gender or sex differences comprise one of the most frequently studied topics in complex human organizations today "(Krayer, 1985, p. 1).

This study attempts to provide conclusions about the male and female managers, and address some methodological issues through a meta-analysis of the primary research of managerial gender communication. THe study addressed four critical issues: 1) The inconsistent findings in managerial gender communication research; 2) the potential influence of male and female stereotypes on research methodology and outcomes; 3) the potential influence of expectancy bias and experimenter effect on primary research studies, and; 4) the effect of time on managerial gender communication research outcomes.

Findings of Managerial Gender Communication Research

Overall, findings from managerial gender communication research have not provided consistent or distinct conclusions about the managerial behaviors of men and women (Brown, 1979; Day & Stogdill, 1972; McDonald, 1981; Osborn & Vicars, 1976). Writers have suggested that significant differences exist in the communication behaviors of male and female managers (e.g., Baird & Bradley, 1979; Berryman-Fink, 1982; Camden & Witt, 1983;

Donnell & Hall, 1980; Krayer, 1984; Staley & Shockley-Zalabak, 1986; Weimann, 1985; Wiley & Eskilson, 1982), while others have argued there are no significant differences in the managerial communication behaviors of the two sexes (e.g., Birdsall, 1980; Chapman, 1975; Day & Stogdill, 1972; Deaux, 1979; Kipnis, 1983; Scheirer & bartol, 1980; Szilagyi, 1980; Wexley & Hunt, 1974). In a comparative review of male and female management studies, Brown called the available literature on managerial gender communication "inconclusive" (1979, p. 597). Therefore, scholars are unable to draw specific conclusions about the similarities and differences between male and female managerial communication behaviors.

Furthermore, since researchers often examine variables other than actual communication behavior of managers, it becomes more difficult to obtain a clear view of managerial gender communication. Studies examine such diverse topics as "subjects' perceptions of behavior of male and female managers (e.g., Adams, Rice, & Instone, 1984; Chusmir, 1985; Haccoun, Sallay & Haccoun, 1978; Massengill & DiMarco, 1979; Powell & Butterfield, 1979; Schein, 1973; Schein, 1975), the behavior of subordinates toward male and female managers (e.g., Adams, Rice & Instone, 1984; Andres, 1985; Renwick, 1977); or the values of managers (e.g., Ryan, 1981; Watson & Ryan, 1979), or the evaluation/perception of female managers without comparison to male managers (e.g., Ezell, Odewahn & Sherman, 1981; Garland & Price, 1977; Moore & Rickel, 1980; Peters, Terborg & Taynor, 1974; Powell & Butterfield, 1980;

Sashkin & Maier, 1971; Stevens & DeNisi, 1980; Terborg, Peters, Ilgen & Smith, 1977; Yerby, 1975). Citing such studies in the managerial gender communication behavior literature magnifies the inconsistencies and confusion towards management behavior.

A systematic meta-analysis is needed to evaluate and resolve inconsistencies in the current research on managerial gender communication. Rogers (1981b) contended that, ". . . many research fields need a synthesis of their progress to date more urgently than they need a 50th or 100th, or 1000th primary research. Under these conditions one more primary research will be less valuable than a meta-research" (p. 7). To begin the process of analysis, it was critical to compile and analyze the differences and similarities in the communication behaviors of male and female managers. Thus the following research questions will be examined.

RQ1: Do male and female managers communicate differently?

RQ2: Are the differences in managerial gender communication small or large when the most frequently tested communication behaviors are analyzed?

The Confounding Effect of Gender Stereotype

An important factor contributing to discrepant research findings may have been the effect of stereotypes. While males are stereotypically considered dominant, aggressive, demanding, and unemotional, the established stereotypical descriptions of females include submissive, passive, emotional, compassionate, empathetic, and supportive (Berryman-Fink, 1982). According to

White, DeSanctis and Crino (1981), males and females often perceive these stereotypes in the organization. In fact, both male and female managers described a successful manager using characteristics, attitudes, temperaments, and behaviors more commonly attributed to men than women (Bartol & Butterfield, 1976; Bass, 1981; Berryman-Fink & Wheeless, 1984; Brenner & Bromer, 1981; Denmark, 1977; Powell & Butterfield, 1979; Shein, 1975).

The association between sex-role stereotypes and requisite management characteristics suggests that females are less qualified for management positions (Berryman-Fink, 1982; Camden & Witt, 1983; Shein, 1975). These views place the female manager in the paradoxical situation of conforming to the masculine managerial role and maintaining the feminine role (Putnam, 1979). Thus, ". . . acceptance of stereotypical male characteristics as a basis for success in management may be a necessity for the woman seeking to achieve in the current organizational climate (Shein, 1975, p. 343). However, Terborg (1977) found that behavior consistent with sex-role was evaluated more positively than out-of-role behavior. Likewise, Camden and Witt found that ". . . women managing in a stereotypical feminine style may be better managers than men managing in a stereotypical masculine style "(1983, p. 2). Counter-stereotypical behaviors often produce negative results (Staley & Shockley-Zalabak, 1986) placing female majors in a "catch-22" situation.

Researchers, subjects, and people in general have been acculturated to know, and often accept, male and female stereotypes. Due to their widespread acceptance, stereotypes may have biased the perceptions of researchers and subjects in organizational studies. For managerial gender communication researchers, stereotypes cannot be disregarded as contributing factors in the portrayal of male and female managers.

Perceptions reflect stereotypes. Studies in managerial gender communication usually rely on the perceptions of behavioral observations of two groups of people--members outside the organization (typically students) and actual members of the organization. "Most student studies supported the commonly held beliefs about women's leadership style and effectiveness. On the other hand, managerial studies did not support the typical female stereotyping . . ." (Brown, 1979, p. 595). In fact, "Practicing managers overwhelmingly feel that there is no difference between male and female leadership styles; whereas students generally hold the opposite to be true" (Brown, 1979, p. 607). According to Brown (1979), this discrepancy raises questions about the validity of stereotyping as a discriminating factor in management environments.

In comparison summary of literature, Brown (1979) and Eblen (1984) reported a relationship between the type of research subjects and the identification of differences between male and female managerial behaviors. Where managers and subordinates are in long-term, ongoing, real-life situations, there has been a

consistent failure to find differences between male and female managerial behavior and performance (Day & Stogdill, 1972; Deaux, 1974; Osborn & Vicars, 1976). Therefore, the subjects used in social science are of critical importance as they may perpetuate or invalidate gender stereotypes.

Many people have questioned the legitimacy of using university students to obtain results that are generalized to another population, particularly a formal organization for which students may have no frame of reference, and where they may be reporting stereotypical views rather than actual behavior. Yet, in the study of managerial gender communication many studies use students as evaluators of male and female managers. Further, several studies have placed students in simulated managerial roles, and then generalized results to the organizational environment. Therefore, to determine whether the type of subject has affected managerial gender communication research, research question three is posited.

RQ3: Are differences in managerial gender communication larger or smaller when members outside the organization are used as subjects as opposed to members inside the organization?

Furthermore, since stereotypes are often a reflection of individuals' perceptions, perceptual tests may be more likely to reflect gender stereotypes. In fact, Brown's (1979) comparative review of management literature found that perceptual tests validated stereotypes more than behavioral tests. Because

perceptual tests are common tools of measurement in managerial gender communication research question four is posited.

RQ4: Are differences in managerial gender communication larger or smaller when the methodological approach differs? More specifically, are there differences between studies in which subjects report observed behavior, report perceptions of a generalized target, report perceptions of a specific target, or provide self-reports?

Scientist's expectations, ". . . are likely to affect the choice of the experimental design and procedure in such a way as to increase the likelihood that his expectation or hypothesis will be supported" (Rosenthal, 1976, p. 127). Rosenthal (1976) argued that the presence of some experimenter expectancy is virtually a constant in science. Friedman argued that, ". . . examiner bias plays a considerable part is psychological testing" (1967, p. 132). In the case of the social scientist there is the ever present possibility that his/her behaviors will affect the subjects participating in the experiment.

One specific factor producing experimenter bias may be the gender of the researcher. "A good deal of research has been conducted which shows that male and female experimenters sometimes obtain significantly different data from their subjects" (Rosenthal, 1976 p. 42). Some data suggest that gender is as important an experimenter effect as male and female experimenters behave differently toward their subjects

(Rosenthal, 1978). Moreover, gender biases may be increased in gender studies.

Since societal stereotypes of males and females are so well enmeshed in our culture, it is possible, even likely, that when studying managerial gender communication bias and experimenter effect are factors for consideration. Furthermore, these methodological issues may play some part in the inconsistent findings in the managerial gender communication literature. Therefore, it seems legitimate to question whether the sex of the experimenter is related to the study outcome.

RQ5: Are the differences in managerial gender communication larger or smaller depending on the sex of the researcher?

A Diffusion of Innovations Perspective

The influx of women into management symbolized a change in the societal and cultural role of women in the organization. According to Rogers (1962), the new role of females as managers can be seen as a recent innovation diffusing into organizations. The influx and acceptance of female managers may be seen as a diffusion of innovation. For this meta-analysis, Roger's (1962) diffusion of innovations theory was used as a framework to determine if a correlation existed between the date of the study and the study outcome. Since the majority of the managerial gender communication research took place in the 1970's during a time when the number of female managers was increasing, it is possible that the behavior of female managers has changed over

time. One might hypothesize that as organizations adopted/accepted females as managers the results of research findings may have changed. Research Question six attempts to discover whether or not the outcomes of managerial gender communication studies have changed over time.

RQ6: Are the differences in managerial gender communication smaller or larger depending upon the year the study was conducted?

The six research questions address inconsistencies and methodological issues in the managerial gender communication literature. "Contradictory findings must be resolved and clear distinctions made between the impact of sex and that of gender before the abundant research in this category can be fully understood, interpreted and utilized" (Foss & Foss, 1983, p. 198).

META-ANALYSIS OVERVIEW

Definition

Meta-research has been defined several ways. Hatti and Hansford (1984), define meta-research, as a quantitative way to reduce the findings of many disparate studies to a common metric, and then to relate the common value to independent variables of study. Crehan (1985) calls meta-research "a method that permits the integration of quantitatively expressed findings from a number of original or primary studies, all of which have addressed essentially the same research problem" (p. 263). Finally, Rogers (1981a) defines meta-research as "the synthesis

of research results into more general and theoretic conclusions. The essence of meta-research is research on research where the scholar seeks to determine certain propositions, generalizations and principles out of a number of 'primary researches' that have been completed on a particular research issue" (p. 5).

Meta-research is in fact, advanced statistical synthesis leading to generalizable conclusions and theoretical developments. The researcher's data are the primary studies that exist on a body of literature, in this case managerial gender communication. The analysis provides general conclusions that clarify, solidify, or develop further the body of literature being studied.

Importance of Meta-Research

According to Rogers (1981b), there are three reasons why a meta-research is important and should be used to study organizational communication. First, meta-research is necessary due to the vast amount of research being conducted (Crehan, 1985; Rogers, 1981b). Crehan (1985) further supports the importance and superiority of meta-research by insisting that, "instead of relying on intuitive judgement and plausible arguments to ascertain what is known about a given topic and to identify the gaps in that knowledge, the use of meta-analysis permits conclusions to be based on the statistical aggregation and synthesis of data derived from the review" (p. 264).

Through meta-analysis the inconsistencies of managerial gender communication research can be addressed, and perhaps

resolved, by the superior method of meta-research. "The basic reason why meta-research is such a legitimate and scholarly activity is due to its unique ability to yield 'value-added' in scientific information above and beyond its constituent primary researches: (Rogers, 1981b, p. 6). "The 'whole' of meta-research conclusions are often greater than the sum of the primary researches that are synthesized" (Rogers, 1981b, p. 6). The synthesis of information from the meta-analysis will provide opportunity to develop general conclusions about managerial gender communication. This is necessary in order to successfully continue the research on managerial gender communication research.

METHODS

Sample of Studies

The first step in a meta-analysis is locating studies relevant to the research (Crehan, 1985; Glass, 1981). To be included in the present meta-analysis each article had to meet the following criteria: 1) All studies clearly operationalized and defined identifiable communication behaviors or perceptions of behaviors as the dependent variable; 2) All studies provided statistical tests that could be used for conversion to a common metric (r). Studies that met criteria one, but provided only standard deviations, means, or percentages were utilized by calculating the appropriate statistic from the available data. Therefore qualitative studies, literature reviews, and rhetorical analyses were not included; 3) Research studies were included if

they assessed an individual in a formal management or authority role in an actual organization, a simulated organization, or a hypothetical organization; 4) Studies were included only if they were published. This criteria was imposed because it would not be possible to guarantee a comprehensive sample of unpublished works; 5) Since the majority of the research on managerial gender communication was conducted in the late 1970's and early 1980's, only those articles published between 1970 and 1985 were included.

In order to obtain a useful and comprehensive sample of studies, a detailed search was executed employing the following steps: 1) Bibliographies, literature reviews, convention papers, and other studies on managerial gender communication were examined to develop a base of primary studies and other useful articles from which to proceed; 2) A manual search of the following abstracts and indices was conducted: Current Index to Journals in Education, Index to Journals of Studies in Communication, Psychological Abstracts, Social Science Citation Index, and Women's Work and Women's Studies, Women's Studies. During the manual search, several key terms were cross-referenced for each abstract and index (e.g., human sex differences, sex differences, sex-roles, communication, organizational communication, male, female, managers, manage, management, leader, leaders, leadership, behaviors). From these sources numerous articles were identified for review. Each article was obtained and read to determine if it met the necessary criteria;

3) The reference lists of each article were scrutinized to generate additional potential studies for the meta-analysis. Those studies were read, and their reference lists were reviewed for potential studies. This procedure continued throughout the data search until no new studies were extracted; 4) Finally, a library computer search was conducted to determine whether or not any studies had been missed in data search. Several additional studies were identified for review.

Over 200 studies were examined to determine their usefulness for the meta-analysis. From these studies the researcher determined that 25 studies (with a total of 174 tests of sex differences in managerial communication behavior) met the above criteria, and would therefore be included in the meta-analysis (see Table 1).

Once a comprehensive sample of relevant studies has been generated, the next two steps involve recording the characteristics of each study and converting the results of each test to a common metric (Crehan, 1985; Glass, 1981). The following characteristics of each study were logged onto a data matrix: authors of the study, number of subjects, sex of target, sex of subject, types of variables in each study, statistical tests, statistical findings, correlations, whether methodologies relied on perceptions or a record of actual behavior, whether subjects were inside or outside an organization, and specific calculations for each research question.

Independent Variable

For this meta-analysis the independent variable was constant for all six research questions, gender of the manager.

Dependent Variables

The dependent variable in the first research question was the communication behavior of the manager. In research question one, each communication behavior was considered one unit of observation. By comparing communication variables as an aggregate, the researcher could determine if there were general communication differences between male and female managers.

For the second research question, seven communication behavior content categories of male and female managers were used as dependent variables. The categories were developed by reviewing the operational definitions and information provided by the research(s) of each study and classifying each into its appropriate category (see Table 2). The following seven content categories with a brief description of each is provided: 1) Leader Emergence: Those communication behaviors where an individual is evaluated by other group/organization members as exhibiting behaviors indicative of a leader. Through the process of completing an organized or group task, a leader emerged. The group members evaluated each other to determine which member emerged from the group as the overall leader; 2) Communication Facilitation: This category encompassed managerial communication behaviors that encouraged participation and communication including: giving suggestions and information about tasks;

explaining; using upward and downward communication; asking for information, suggestions and opinions; and holding discussions; 3) Autocratic Leadership Behavior: The leader did not place a priority on consultative or interactive communication between himself/herself and subordinates, but is concerned with adhering to the formal roles, structure, and goals of the organization. Behaviors included: telling others what to do; dominating; demanding; Machiavellian; refusing to explain behavior; unwillingness to accept feedback; making decisions independent of the group; ordering; and concern with initiating structure, role assumption, and role retention; 4) Democratic Leadership Behavior: Democratic leaders, although task oriented, give more attention to the socio-emotional needs of the organizational members. Behaviors in this category included receptiveness to ideas, encouraging efforts, offering compromise, acting humble, advocating participation, letting employees work on their own, tolerating freedom, listening to members, using consideration behaviors, and often getting group approval in decision making; 5) Influence Strategies: Influence strategies represent the manager's use of persuasive techniques, or reliance on formal authority to convince employees. Behaviors included: employing more bases of power, using influence strategies, persuading, using logic to convince, and giving opinions; 6) Positive Affect Behavior: These behaviors are those communication strategies that are not necessarily related to task accomplishment, but rather the emotional well-being of the organizational members.

Behaviors included: promoting happy relations; friendliness; positive socio-emotional behavior; kidding; integrating; attentiveness; openness; showing concern; giving agreement statements; approving; praising; dramatizing; and using friendly, intimate, reward, helping, and positive affect styles of leadership; 7) Negative Affect Behavior: Negative affect behaviors are those that undermine the morale of the organizational members. Behaviors include: being quick to challenge, questioning, disagreeing, seeming unfriendly, using negative socio-emotional behaviors, showing tension, criticizing, verbally aggressive, and using a threatening style of punishment (see Table 2).

Moderator Variables

"A moderator variable is a variable that causes differences in the correlation between two other variables . . . . If there is a true variation in results across studies, then there must be such a moderator variable (or possibly more than one) to account for such variance" (Hunter et al., 1982, p. 47). "A moderator variable will show itself in two ways: (1) the average correlation will vary from subset to subset and (2) the corrected variance will average lower in the subsets than for the data as a whole" (Hunter et al., 1982, p. 48).

For the third research question, the moderator variable was the hope of subjects, from either inside the organization or outside the organization. Those subjects outside the organization were always students drawn from the university

setting. Those subjects inside the organization ranged from support staff to executives.

For question four, the moderator variable was the type of test the subjects used to assess management communication behavior. Four types of tests were found in the literature: 1) Actual behavior coding, where a person coded/reported the actual behavior of a manager; 2) Perceptions of a generalized target, where the subject was thinking about the behavior of a "generic" manager when participating in the study; 3) Perception of a specific target where the subject was evaluating his/her supervisor or some specific manager when participating in the study; 4) Self reports where the managers were evaluating their own leadership behavior, or perception of their own behavior.

For the fifth research question, the moderator variable was the sex of the research(s), expressed as the percentage of female researchers. For example, in a study that has four authors, three males and one female, the percentage of female authors would be recorded as .25.

Finally, for the sixth research question the moderator variable was the year that the study was published.

Statistical Analysis

All statistics from the sample studies were converted to the common metric r, the correlation coefficient using procedures outlined by Hunter et al. (1982). One statistics from each test were converted to common r, the point-biserial correlation (corrected r) was used to correct for the difference in sample

size between male and female managers. According to Hunter et al., "If the two sample sizes are discrepant, then the point-biserial correlation (corrected r) should be adjusted to what it would be for equal sample sizes" (1982, p. 99). Although unequal sample size may represent the unequal distribution of the two sexes in management, it was critical to correct for sample size to statistically determine if significant managerial gender communication differences existed. For those few studies that did not provide the information necessary to calculate corrected r, the original r was employed.

The final step of meta-analysis, identified by Crehan (1985) and Glass (1981), was applying statistics to determine the relationships among the findings and study characteristics once all results had been converted to the common metric corrected r. The studies used in the meta-analysis often employed tests of more than one communication behavior, providing multiple tests within studies. To insure that each communication behavior was reflected equally within its study, every variable was treated as an independent test. Thus, the n for <u>each</u> test is equal to the n for the <u>total</u> study. This method ensured that each communication variable was analyzed as though it were an independent study with equal chance of representation among all variables.

Studies with relatively larger n's and those testing several communication behaviors, received more weight in this meta-analysis since a weighted r was employed to aggregate findings. The advantage of using weighted r was that it gives greater

impact to studies with larger samples which are better estimates of the population parameters than studies using small samples.

To answer research question one, two tests were employed, a single count to determine which tests found significant differences and a weighted r was calculated.

For research question two weighted r was calculated for each of the seven dependent variables that were developed based on the most frequently tested communication variables.

Research question three was answered by calculating a weighted r for studies conducted inside the organization and studies conducted outside the organization. After the correlations were computed, a t-test was calculated to compare differences in the magnitude of r between these two types of subjects.

Research question four was answered with a one way analysis of variance which compared four types of tests: coded behavior, perception of specific target, perception of generalized target, and self-report.

For research question five the sex ratio of the researchers was correlated with the final r for each study obtained in question one, to determine if sex of the researcher had any moderating effect on research outcomes in the study of managerial gender communication.

The final research question tested for the moderating effect of the year in which the study was conducted by correlating the

year of the study with the magnitude of the findings in each study.

RESULTS

The first research question was: "Do male and female managers communicate differently? The analysis employed 174 published tests of sex differences in managerial gender communication from 25 studies and determined how many individual tests were statistically significant. The results indicated that out of 174 statistical tests, 57 were found to be statistically significant (33%). In aggregate, the overall relationship was significant ($r = .066$, $p > .012$), but less than half of one percent of the variance in managerial communication behavior ($r^2 = .004$) was accounted for by gender (see Table 3). Due to the large sample size (70,056), the power for detecting even small effects was in excess of .995 (Cohen, 1977). So, due to the power of this test, a very small difference was statistically significant.

Research question two asked: "Are the differences in managerial gender communication small or large when the most frequently tested communication behaviors are computed?". As described in the methods section, seven categories of managerial communication behavior were developed based on conceptually similar behaviors. Statistically significant gender differences were found for all seven categories: positive affect behavior ($r = .056$, $p = .01$), influence strategies ($r = .062$; $p = .012$), autocratic behaviors ($r = .079$, $p = .016$), facilitation of

information exchange ($r = .037$, $p = .037$), and leadership emergence ($r = .135$, $p = .14$) (see Table 4). However, as in research question one, the variance accounted for is minimal. The r^2 coefficient ranged from .006 to .018 for the seven tests. As was the case with question one, power for research question two was in excess of .995 which accounted for these relatively trivial coefficients reaching statistical significance.

The third research question asked: "Are differences in managerial gender communication larger or smaller when members outside the organization are used as subjects as opposed to members inside the organization? Results indicate that there are no significant differences in the determination of managerial gender differences when different subjects are used ($t = -1.217$, $p > .05$; see Table 5). The power for research question three is in excess of .995 for small effects (Cohen 1977), so this test would have detected even small effects if significant differences existed.

The fourth research question asked: "Are the differences in managerial gender communication larger or smaller when the methodological approach relies on tests of perceptions of management behavior, rather than on tests of actual management behaviors?" For this question four categories were developed to describe how male and female managerial communication behaviors were analyzed or tested. These four categories were perceptions of a specific target, perceptions of a generalized target, self-report, and the coding of actual behavior. A one-way analysis of

variance found no significant differences ($F = 1.8878$, $p > .05$, $df = 3/171$) among the four conditions (see Table 6). The power to detect medium or large effects for research question four was in excess of .995. However, the power to detect a small effect was .61, so there was a 39% chance that there may have been a small effect that was not detected.

The fifth research question examined whether differences in managerial gender communication larger or smaller depending on the sex of the researcher? As with questions one and two, statistical significance was found ($r = .072$, $p < .014$, but the effect was minimal $<r^2 = .005$). Male authors found significantly more gender differences than did female authors (see Table 7).

The final research question asked: "Are the differences in managerial gender communication smaller or larger depending upon what year the study was conducted?" Statistical significance was found ($r = .001$, $p < .001$; indicating however r^2 remains minute ($r^2 = .000001$; see Table 7).

DISCUSSION

Research question one posited the overriding, and often disputed, question about male and female managerial communication: Are there really any gender differences in the communication behaviors of male and female managers? Although the statistically significant results suggest that differences do exist, the variance accounted for was so small that statistical significance appears to have little social value. It can be safely concluded that there is no meaningful difference in the

communication behaviors of male and female managers based on current quantitative findings. The same conclusion applies to the seven categories of communication behaviors addressed in question two. No meaningful gender differences in positive affect behavior, influence strategies, autocratic behavior, democratic behavior, negative affect behavior, communication facilitation, and leader emergence were found. Though each behavior showed a statistically significant gender difference each accounted for only one percent of the variance or less.

Research questions three through six tested the effect of moderator variables on the outcomes of managerial gender communication. Some scholars (Brown, 1979; McDonald, 1981) have suggested that tests using students, rather than organizational members, are more likely to perpetuate stereotypes and result in reported differences. Although the means for participants outside and inside actual organizations suggested that more differences were found when students were used as subjects, the differences were not statistically significant. Despite the intuitive argument against the use of students as evaluators of management, this meta-analysis suggests that both students and organizational members are viable evaluators of the communication behaviors of male and female managers, since results obtained from the two groups are roughly comparable.

The fourth research question analyzed whether or not the type of measurement affected the reported managerial gender communication. Four types of methods were compared: perceptions

of a specific target, perceptions of a general target, coding actual behavior, and self report. ANOVA results showed no significant effect of this moderator variable on differences in managerial gender communication. This suggests that all four research methods may be effective for studying the communication behaviors of male and female managers.

The fifth research question sought to determine whether or not the sex of the researcher affected the results of the findings in the managerial gender communication research. Statistical significance was found, but again the variance accounted for was minimal, totaling less than one half of a percent. Rosenthal (1976) suggested that sex of the researcher may affect study outcomes. In the case of managerial gender communication research, experimenter effects based on sex of the researcher may affect study outcomes. In the case of managerial gender communication research, experimenter effects based on sex of the researcher appear to be minimal.

Research question six asked whether or not differences in managerial gender communication became less frequent in more recent studies when female managers were more common in organizations than in the early 1970s. Again statistical significance was found, but as in other research questions the variance accounted for was very small ($eta^2 = .002$).

It appears that the behaviors of, or perceptions towards, female and male managers never were substantially different and have not changed over time as a result of female manager's

greater involvement in the organizational environment. This may be due to the masculine environment in a typical organization which socializes women through orientation, mentoring, politics, social structures, or other inculturation procedures, inculcating more masculine characteristics for both male and female managers. Even if sex differences exist outside the organizational world, women learn how to adapt their feminine behaviors to greater degrees of masculinity in order to succeed in the organization (Putnam, 1979). It should also be noted that organizations may have adopted more feminine characteristics that are adapted to the presence of women in organizations and management and may have socialized men toward these norms. One additional possibility is that male/female gender differences in general are overwhelmed by the considerable similarities between the sexes, a position taken by a number of gender researchers (Ambert, 1976; Pearson, 1985).

A meta-analysis is only as good as the articles upon which it was based. As is the case with all meta-analysis, it is impossible to assure that all relevant studies have been included. By including only published studies, unpublished, but equally important, studies were not included in the review. Because meta-analytic scholars (Glass et al., 1981; Hunter et al., 1982) suggested a comprehensive review of primary studies, the authors found it necessary to establish a criterion that enable a complete search of the designated parameters.

A second problem in all meta-analysis according to Hunter et al., (1982) is that published studies may be biased because journal editors, and academic disciplines in general, are more receptive to studies that provide statistically significant results. Moreover, scholars are more likely to submit significant results. Moreover, scholars are more likely to submit significant results for publication. It is not clear whether the articles in this meta-analysis fell prey to that bias, since only 33 percent of the studies in the meta-analysis reported significant results, it seems that many studies in the area of managerial gender communication were published in spite of nonsignificant findings.

Another problem inherent to all types of meta-analysis is the lack of information sufficient for re-analysis. Some managerial communication studies were unusable due to the lack of information reported by the original research(s), evaluations of only one sex without comparison to the other sex, or poor operationalization and identification of communication variables. Clearly, the results of all meta-analysis will be improved only when primary researchers give detailed methods and results including reliability coefficients, statistical tests, and effect size indices. Although the researchers in the present study intended to correct for attenuation, only two of the 25 studies reported any reliability coefficients for their variables. By correcting for attenuation we would have been able to determine, ". . . what the correlation would have been had the variables

been perfectly measured" (Hunter et al., 1983, p. 37). Unfortunately, a lack of reliability coefficients precluded any efforts to correct for attenuation correction even among the 25 studies that report data sufficient to be included in the meta-analysis.

Future Directions

Because of the small effects accounted for in the meta-analysis managerial gender communication, the first suggestion for future research is to move away from attempts to identify gender differences between managers. If we are to understand managerial gender communication, researchers need to concentrate less on identifying differences or similarities and more on identifying the situational factors which affect behavior. Second, studies should move away from a trait perspective and incorporate a combination of the trait and situational approaches, in a move toward interactionism. The interactionist perspective combines the study of trait and situation variables to reach a more complete understanding of human perception, cognition, and behavior (Andersen, 1987). By applying the interactionist perspective to managerial gender communication, scholars can view management behaviors in a more complex and productive model.

A theory of managerial gender communication should begin with an inductive premise of small or nonexistent sex differences. Based on the available evidence, it is likely very few differences in the communication behaviors of male and female

managers are a result of biological sex. Rather, male and female managers respond to their environments based on individual, situational and interactional variables. Sex is only one variable and should not be considered the primary influence on the behaviors of male and female managers in the organizational context. Future theories of managerial gender communication should focus on the substantial similarities rather than the trivial differences between male and female managers.

FOOTNOTES

1. Since the power coefficients for research questions one through six were typically in excess of .995, it is important to interpret power findings. Because the cumulation method of communication variables results in the reporting of multiple significance tests for each study, sample size and power coefficients were inflated for the cumulation process. The power was not as high as it might have been had findings not been cumulated across and within studies.

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Table 1: The 25 Studies Included in the Meta-Analysis

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Table 2

A listing of all variables included in each of the seven categories in research question two.

Category/Behavior	Author(s)	Date
Positive Affect Behavior		
Giving agreement statements	Alderton & Jurma	1980
Promotes happy relations	Baid & Bradley	1979
Shows concern	Baid & Bradley	1979
Attentive	Baid & Bradley	1979
Open	Baid & Bradley	1979
Friendly	Baid & Bradley	1979
Dramatic	Baid & Bradley	1979
Approving	Baid & Bradley	1979
Demand reconciliation	Bartol & Wortman	1975
Integration	Bartol & Wortman	1976
Promotes happy relations	Camden & Witt	1983
Shows concern	Camden & Witt	1983
Attentive	Camden & Witt	1983
Open	Camden & Witt	1983
Friendly	Camden & Witt	1983
Dramatic	Camden & Witt	1983
Approving	Camden & Witt	1983
Demand reconciliation	Day & Stogdill	1972
Integration of rating	Day & Stogdill	1972
Positive affect	Fowler & Rosenfeld	1979
Seems friendly	Fowler & Rosenfeld	1979
Dramatizes	Fowler & Rosenfeld	1979
Agrees	Fowler & Rosenfeld	1979
Positive Socio-Emotional Beh.	Fowler & Rosenfeld	1979
Reward style	Rosen & Jerdee	1973
Friendly dependent	Rosen & Jerdee	1973
Helping approach	Rosen & Jerdee	1973
Competence-environment	Snyder & Bruning	1979
Praised	Stitt, Schmidt, Price, Kipnis (studies 1 & 2)	1983
Kidded	Stitt, Schmidt, Price, Kipnis (studies 1 & 2)	1983
Influence Strategies		
Attempts to influence	Baird & Bradley	1979
Persuasiveness	Bartol & Wortman (1 & 2)	1975
Persuasiveness	Day & Stogdill	1972
Bases of power	Rice, Instone & Adams (1 & 2)	1984
Influence strategies	Rice, Instone & Adams (1 & 2)	1984
Use of influence	Rousell	1974
Used logic to convince	Stitt, Schmidt, Prince Kipnis (1 & 2)	1983

Category/behavior	Author(s)	Date
Autocratic Behaviors		
Tells what to do	Baird & Bradley	1979
Dominant	Baird & Bradley	1979
Directs conversation	Baird & Bradley	1979
Representation	Bartol & Wortman	1975
Initiating structure	Bartol & Wortman	1975
Role assumption	Bartol & Wortman	1975
Production emphasis	Bartol & Wortman	1975
Representation	Bartol & Wortman	1976
Initiating structure	Bartol & Wortman	1976
Role assumption	Bartol & Wortman	1976
Production emphasis	Bartol & Wortman	1976
Initiating	Butterfield & Powell (1 & 2)	1981
Initiating	Butters & Gade	1983
Refuses to explain actions	Butters & Gade	1983
Acts without consulting group	Butters & Gade	1983
Slow to accept new ideas	Butters & Gade	1983
Tells what to do	Camden & Witt	1983
Dominant	Camden & Witt	1983
Directs conversation	Camden & Witt	1983
Machiavellianism	Chonko	1982
Representation	Day & Stogdill	1972
Structure	Day & Stogdill	1972
Role retention	Day & Stogdill	1972
Production emphasis	Day & Stogdill	1972
Initiation structure	Osborne & Vicars (1 & 2)	1976
Set time deadlines	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Demand	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Ordered	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Democratic Behaviors		
Receptive to ideas	Baird & Bradley	1979
Encourage efforts	Baird & Bradley	1979
Comfortable	Baird & Bradley	1979
Tolerance for freedom	Bartol & Wortman	1975
Consideration	Bartol & Wortman	1975
Tolerance for freedom	Bartol & Wortman	1975
Consideration	Bartol & Wortman	1975
Consideration	Butterfield & Powell (1 & 2)	1981
Consideration	Butters & Gade	1983
Listens to group members	Butters & Gade	1983
Gets group approval before acting	Butters & Gade	1983
Receptive to ideas	Camden & Witt	1983
Encourages efforts	Camden & Witt	1983
Comfortable	Camden & Witt	1983

Category/behavior	Author(s)	Date
Tolerance of freedom	Day & Stogdill	1972
Consideration	Day & Stogdill	1972
Attempted task answers	Fowler & Rosenfeld	1979
Democratic	Rosenfeld & Fowler	1976
Acted humble when requesting	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Pseudodemocratic	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Let work on own	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Negative Affect Behaviors		
Quick to challenge	Baird & Bradley	1979
Quick to challenge	Camden & Witt	1983
Questions	Fowler & Rosenfeld	1979
Disagree	Fowler & Rosenfeld	1979
Shows tension	Fowler & Rosenfeld	1979
Seems unfriendly	Fowler & Rosenfeld	1979
Negative Socio-Emotional Beh.	Fowler & Rosenfeld	1979
Verbal Aggression	Rice, Instone & Adams	1984
Threat style	Rosen & Jerdee	1973
Negative Socio-Emotional Beh.	Schneier & Bartol	1980
Criticized	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Facilitates Information Exchange		
Gives information	Baird & Bradley	1979
Gives information	Camden & Witt	1983
Talk time	Eskilson & Wiley	1976
Gives suggestions	Fowler & Rosenfeld	1979
Gives opinions	Fowler & Rosenfeld	1979
Gives information	Fowler & Rosenfeld	1979
Asks for information	Fowler & Rosenfeld	1979
Asks for opinions	Fowler & Rosenfeld	1979
Asks for suggestions on task behaviors	Fowler & Rosenfeld	1979
Upward communication	Rice, Instone & Adams (1 & 2)	1984
Downward communication content	Rice, Instone & Adams (1 & 2)	1984
Downward communication quality	Rice, Instone & Adams (1 & 2)	1984
Gives information/suggestions	Schneier & Bartol	1980
Asks for information/suggestions	Schneier & Bartol	1980
Information received from boss top management	Siegerdt	1983
Information received from boss	Siegerdt	1983
Quality of information received from top management	Siegerdt	1983
Quality of information from boss	Siegerdt	1983

Category/behavior	Author(s)	Date
Explained	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Asked	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Held discussions	Stitt, Schmidt, Price Kipnis (1 & 2)	1983
Leadership Emergence		
Leader emergence	Bunji & Andrews	1985
Leader emergence	Scheier & Bartol	1980
Leader emergence	Wenworth & Anderson	1984

Table 3

Statistical findings for research question one: Are there differences between male and female managers?

$\bar{r}$	$\bar{r}^2$	z-value*	p.	n
.066	.004356	.06	.012	70,056

*to obtain significance levels for the unusually large n, correlations were converted to z-values to determine significance ($z = 1/2 \log 1+r/1-r$).

Table 4

Seven Categories of Communication Behaviors of Male and Female Managers

Category	r	r^2	z-value	p.	n
PAB	.056	.004356	.06	.012	13717
IS	.062	.003844	.06	.012	5394
AUT	.079	.006241	.08	.016	8076
DEM	.078	.006084	.08	.016	8902
NAB	.076	.005776	.08	.016	2580
FIE	.037	.001369	.04	.008	21692
LE	.135	.018225	.14	.025	512

Table 5

T-Test Comparing Subjects Inside the Organization
and Subjects Outside the Organization

Type of Subject	Mean	Variance	N	T-Test
Outside	.11222694	.01098801	41949	-1.2166296
Inside	.14684915	.04608634	27929	

Table 6

Results of Comparison of Four Types of Tests of Managerial Gender Communication

Group	I	II	III	IV
Group Means	.10815	.039	.1229	.2544
Group deviations from grand mean	-.02295	-.0921	-.0082	.1233
Square deviation	.000523	.00848	.000067	.015202
Group n times square deviation	.0523	.0848	.0030	.3192

Between SS = .0523 + .0848 + .0030 + .3192 = .4593

Summary

Source	SS	df	MS	F
Between	.4593	3	.1531	1.8878
Within	13.8704	171	.0811	
	14.3297			

Table 7

Correlations for Sex of the Researcher (RQ5) and Date of the Study (RQ6)

Research Question	r	r^2	z-value	p.
Sex of Researcher	-.072	.005184	.07	.014
Date of the Study	.001	.000001	.001	.001